

## PATENT APPLICATION

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Confirmation No. 3460

Mitsuru UMEKIDA

Atty. Docket No. 100725-00102

Serial No.: 10/659,742

Examiner: Footland, Lenard

Filed: September 11, 2003

Art Unit: 3682

For: WHEEL BEARING DEVICE

FAX RECEIVED

MAY 05 2005

OFFICE OF PETITIONS

**INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Date: April 8, 2005

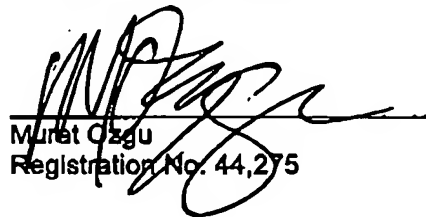
Sir:

Pursuant to 37 CFR §1.56, the attention of the Patent and Trademark Office is hereby directed to the information item(s) listed on the attached Form PTO-SB08. Unless otherwise indicated herein, one copy of each item(s) is attached. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the item(s) be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

- ☒ 1. This Information Disclosure Statement is being filed (a) within three months of the U.S. filing date, OR (b) before the mailing date of a first Office Action on the merits in the present application, OR (c) accompanies a Request for Continued Examination. No certification or fee is required.
- ☐ 2. This Information Disclosure Statement is being filed more than three months after the U.S. filing date AND after the mailing date of the first Office Action on the merits, but before the mailing date of a Final Rejection or Notice of Allowance.
- ☐ a. I hereby certify that each item of information contained in this Information Disclosure Statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 CFR §1.97(e)(1).
- ☐ b. I hereby certify that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 CFR §1.97(e)(2).

- ☐ c. A check in the amount of \$180.00 in payment of the fee under 37 CFR §1.17(p). Please charge any fee deficiency or credit any overpayment to Deposit Account No. 01-2300 as needed to ensure consideration of the disclosed information.
- ☐ 3. This Information Disclosure Statement is being filed more than three months after the U.S. filing date and after the mailing date of a Final Rejection or Notice of Allowance, but before payment of the Issue Fee. Applicant(s) hereby petition(s) that the Information Disclosure Statement be considered. Attached is our check in the amount of \$180.00 in payment of the petition fee under 37 CFR §1.17(i)(1). Please charge any fee deficiency or credit any overpayment to Deposit Account No. 01-2300 as needed to ensure consideration of the disclosed information.
- ☐ a. I hereby certify that each item of information contained in this Information Disclosure Statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 CFR §1.97(e)(1).
- ☐ b. I hereby certify that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 CFR §1.97(e)(2).
- ☒ 4. The references were cited in a counterpart foreign application. An English language version of the foreign search report is attached for the Examiner's information.

Respectfully submitted,

  
Murel Ozgu  
Registration No. 44,275

Customer No. 004372  
ARENT FOX PLLC  
1050 Connecticut Avenue, N.W., Suite 400  
Washington, D.C. 20036-5339  
Tel: (202) 857-6000  
Fax: (202) 638-4810  
MO/elp

Enclosures: PTO Form SB/08a w/4 listed references  
EP Search Report dated March 22, 2005  
Petition to Withdraw Patent Application from Issue  
Request for Continued Examination

294809\_1.DOC

PTO/SB/08a (08-03)

Approved for use through 07/31/2008. OMB 0651-0031  
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

**Under the Paperwork Reduction Act of 1985, no persons are required to respond to a collection of information unless it contains a valid OMB control number.**

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**  
Form PTO/SB/08a

Complete if Known **X** RECEIVED

Application Number	10/659,742
Filing Date	September 11, 2003
First Named Inventor	Mitsuru UMEKIDA
Art Unit	3682
Examiner Name	Footland, Lenard
Attorney Docket Number	100725-00102

Sheet	1	of	1
-------	---	----	---

## U.S. PATENT DOCUMENTS

[illegible]

## FOREIGN PATENT DOCUMENTS

[illegible]

**Examiner  
Signature**

Date  
Considered

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup>Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code. <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST, 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language translation is attached. AB indicates that only an English language abstract is attached. 294887 1.DOC



P.B.5818 - Patentsan 2  
2280 HV Rijswijk (Z-H)  
☎ +31 70 340 2040  
TX 31651 epo nl  
FAX +31 70 340 3016

Europäisches  
Patentamt

Zweigstelle  
in Den Haag  
Recherchen-  
abteilung

European  
Patent Office

Branch at  
The Hague  
Search  
division

Office européen  
des brevets

Département à  
La Haye  
Division de la  
recherche

Hillier, Peter  
Marks & Clerk  
27 Imperial Square  
Cheltenham GL50 1RQ  
GRANDE BRETAGNE

RECEIVED

FAX RECEIVED

MAY 05 2005

21 MAR 2005

OFFICE OF PETITIONS

Date/Date

22.03.05

Zeichen/Ref./Réf. <b>EP16846</b> <b>505SEP</b>	Anmeldung Nr./Application No./Demande n°/Patent No./Brevet n°. <b>03255877.7-2421-</b>
Anmelder/Applicant/Demandeur/Pateninhaber/Proprietor/Titulaire <b>NTN CORPORATION</b>	

## COMMUNICATION

The European Patent Office herewith transmits as an enclosure the European search report for the above-mentioned European patent application.

If applicable, copies of the documents cited in the European search report are attached.

☐ Additional set(s) of copies of the documents cited in the European search report is (are) enclosed as well.

The following specifications given by the applicant have been approved by the Search Division:

☐ abstract

☒ title

☒ The abstract was modified by the Search Division and the definitive text is attached to this communication.

The following figure will be published together with the abstract

1

## REFUND OF THE SEARCH FEE

If applicable under Article 10 Rules relating to fees, a separate communication from the Receiving Section on the refund of the search fee will be sent later.





European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 03 25 5877

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
E	EP 1 396 354 A (NTN CORPORATION) 10 March 2004 (2004-03-10) * paragraph '0062! - paragraph '0072!; figures 12,15 *	1,2	B60B27/00
E	US 2004/022469 A1 (OZAWA MASAHIRO ET AL) 5 February 2004 (2004-02-05) * paragraph '0065! - paragraph '0077!; figures 3,4 *	1-4	
E	EP 1 398 181 A (NTN CORPORATION) 17 March 2004 (2004-03-17) * claims; figures *	1	
A	FR 2 795 021 A (NTN CORPORATION) 22 December 2000 (2000-12-22) * abstract; figure 1 *	1-3	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			B60B
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 14 March 2005	Examiner Vanneste, M
CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons &: member of the same patent family, corresponding document			

# ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 03 25 5877

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

14-03-2005

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 1396354	A	10-03-2004	JP 2002370506 A	24-12-2002
			JP 2003034105 A	04-02-2003
			JP 2003065347 A	05-03-2003
			EP 1396354 A1	10-03-2004
			US 2004234182 A1	25-11-2004
			CN 1463230 A	24-12-2003
			WO 02102608 A1	27-12-2002
US 2004022469	A1	05-02-2004	JP 2004019821 A	22-01-2004
			JP 2004090732 A	25-03-2004
			CN 1473719 A	11-02-2004
			DE 10325584 A1	11-03-2004
EP 1398181	A	17-03-2004	JP 2004155411 A	03-06-2004
			EP 1398181 A2	17-03-2004
			US 2004121847 A1	24-06-2004
FR 2795021	A	22-12-2000	JP 2001001710 A	09-01-2001
			JP 2001018605 A	23-01-2001
			JP 2001018604 A	23-01-2001
			DE 10029100 A1	08-03-2001
			FR 2795021 A1	22-12-2000
			US 2003081872 A1	01-05-2003
			US 6497515 B1	24-12-2002



## ABSTRACT / ZUSAMMENFASSUNG / ABREGE

03255877.7

A wheel bearing device to ensure a sufficient durability and life even with the application of bending moment acting on the wheel bearing device. An outer joint member (41) of a constant velocity joint is fitted into the inside of a wheel hub (10) and a portion thereof is swaged radially outward by plastic deformation to unite the wheel hub and the outer joint member. The outer joint member (41) includes a pilot part (35) adjacent the plastically deformed portion, and the ratio of an inside diameter  $\Phi d2$  of the pilot part to an inside diameter  $\Phi d1$  of the plastically deformed portion is set 1.110 or less.